

Catalogue of American Amphibians and Reptiles.

ROSS, CHARLES A. 1987. *Crocodylus moreletii*.

***Crocodylus moreletii* Duméril and Bibron
Morelet's crocodile**

[*Crocodylus*] *Moreletii* Duméril and Bibron, 1851:28. Type-locality, "Lac Flores (Yucatan)," clarified by Smith and Taylor (1950b) as Laguna de Petén, El Petén, Guatemala. Holotype, Mus. Nat. Hist. Natur., Paris, 7520, stuffed and mounted adult, collected by P. M. A. Morelet (examined by author), figured by Duméril (1852, pl. 20).

Palinia ? *Moreletii*: Gray, 1862:271. New combination.

Crocodylus mexicanus Bocourt, 1869:20. Type-locality, Tampico, Tamaulipas. Two syntypes, stuffed and mounted adult (MNHN 7579, examined by author) figured by Bocourt (1873, pl. 8, fig. 3), donated by Montluc, and designated lectotype by Ross and Ross (in press); and a juvenile (79 cm total length), collector unknown, presumed lost.

Crocodylus moreletii: Morelet, 1871:205. Emendation of ending.

Crocodylus moreletii: Bocourt, 1873:37. Emendation of ending.

Crocodylus moreletii: Sumichrast, 1884:35.

Crocodylus americanus, var. *moreletii*: Günther, 1885:21. New combination.

Crocodylus moreletii: Dugès, 1896:479. Emendation of ending.

Crocodylus moreletii: Schmidt, 1924:79.

Crocodylus moreletii: Kalin, 1933:543.

Ch.[ampse] *moreletii*: Werner, 1933a:105. New combination.

Crocodylus moreletii barnumbrowni Mook, 1959:2. Type-locality, "Treasure Island, Guatemala" (Dept. Petén). Holotype, Amer. Mus. Natur. Hist., Vert. Paleo., 7471, nearly complete left maxillary from Middle Pleistocene deposit (not examined by author).

Crocodylus moreletii: Alvarez del Toro, 1960:59.

Crocodylus moreletii: Alvarez del Toro, 1960:60.

• **CONTENT.** *Crocodylus moreletii* is a monotypic species.

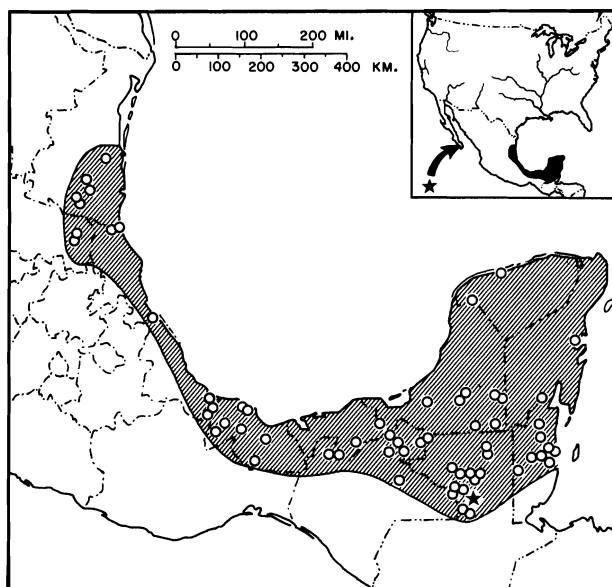
• **DEFINITION.** A palustrine crocodile of up to 3.5 m total length. The premaxillary-maxillary suture is nearly transverse at the level of the first maxillary tooth. The nasals are normally prominently raised. Some individuals display a median preorbital hump, although most have only a slight elevation of the lacrymal region. The cranial table is nearly parallel-sided. The fifth maxillary alveolus is appreciably larger than the fourth. The neck armor normally consists of four or more postoccipital, and six or more nuchal scales. The tail exhibits ventral and often ventro-lateral intercalary irregularity of

the anterior caudal whorls. The scales on the flanks of the rear legs are smooth. The contiguous dorsal scales are asymmetric, often with a reduction in the number of contiguous ossified scales found in some rows across the back at midbody. The adult coloration is uniformly dark brown to black, with a light venter. The juvenile coloration is variable, normally with the cranial table mottled with brown and black; the body and neck are brown with five transverse black bands, the venter is white, and the posterior ventral scales of tail are dark. The iris is light brown to silver.

• **DESCRIPTIONS.** Dunkle (1935) gives cranial measurements of juveniles and describes juvenile coloration and scalation. Mertens (1943) describes skull morphology and juvenile coloration and scalation. Smith (1938) describes the shape of the premaxillary-maxillary suture. Ross and Ross describe the anterior tail (1974) and neck scalation (in press). Álvarez del Toro (1974) gives descriptions of nests, eggs, juveniles, adults, feeding habits, parental care, and copulation. Pérez-Higareda (1980) describes nesting in southern México. King and Brazaitis (1971) and Fuchs (1974) describe ventral scalation. Brazaitis (1974) describes coloration and scalation. Ross and Mayer (1983) describe dorsal scalation.

• **ILLUSTRATIONS.** Colored plates accompany the descriptions of Duméril (1852) and Bocourt (1873). Black and white photographs of dorsal scalation and head are in Neill (1965); juvenile, Casas and Guzmán (1970); copulation, nests, eggs, juveniles, adults, are in Álvarez del Toro (1974); ventral, lateral and dorsal views of skull, are in Mertens (1943). Wermuth (1953) figures the neck, head and skull. Ross and Mayer (1983) figure dorsal and tail squamation. King and Brazaitis (1971) and Ross and Ross (1974) figure anterior tail scalation.

• **DISTRIBUTION.** *Crocodylus moreletii* is found throughout the coastal and interior lowlands of Belize; in Guatemala in Dept. Alta Verapaz (Stuart, 1948; Duellman, 1963) and Petén (Stuart, 1935, 1958) and the Atlantic coastal plain of México from southern Tamaulipas (Baker and Webb, 1966) to the Yucatán Peninsula (Cope, 1866; Duellman, 1965), including the interior lowlands of Chiapas (Shreve, 1957). Peripheral records include: México, San Luis Potosí (Taylor, 1953), Chiapas (Alvarez del Toro, 1960), Yucatán (Powell,



MAP. Stars indicate fossil localities. The solid symbol marks the type locality. Other locality records are marked by open symbols. Shaded area is approximate range of *C. moreletii*.

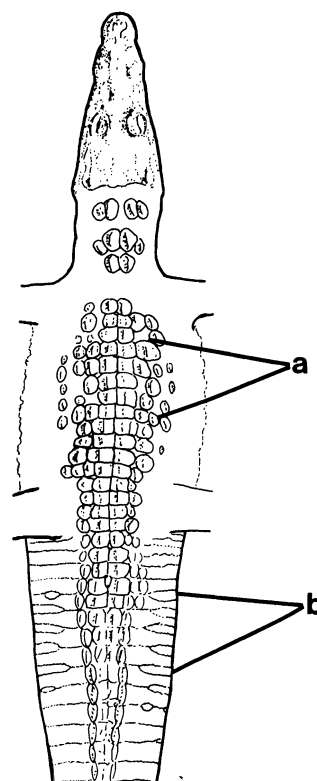


FIG. 1. Skin of *Crocodylus moreletii* (USNM 71955) from Dept. Petén, Guatemala, showing diagnostic scalation; a. asymmetric contiguous dorsal scales, and, b. ventrolateral anterior caudal irregularity. Drawing by F. D. Ross from original by A. Karstad.

1965; Smith and Smith, 1977) and Quintana Roo (Neill, 1971). Records from Colima (Dugès, 1896) and the Río Coatán, Chiapas (Sumichrast, 1884) are considered erroneous following Smith and Taylor (1950a), and are not shown on the map. King and Brazaitis (1971) and Brazaitis (1974) illustrated the distribution of this species as including the Pacific coastal plain of México. This distribution was questioned (King et al., 1982). Bocourt's (1873) record for the Río Polochic, Guatemala, is considered questionable. The species has erroneously been listed from Honduras throughout the literature (Boulenger, 1889; Gadow, 1905; Werner, 1933a; King et al., 1982; Wilson et al. (1986) have shown that the species involved is *Crocodylus acutus*.

● **FOSSIL RECORD.** A nearly complete left maxillary (AMNH, VP 7471) from Middle Pleistocene deposit, Dept. Petén, Guatemala, was described and named *C. m. barnumbrowni* by Mook (1959). Neill (1965) denies the validity of this subspecies. Miller (1980) attributes jaw fragments, teeth and a vertebra from late Pliocene deposits from Cabo San Lucas, Baja California, to this species.

● **PERTINENT LITERATURE.** Álvarez del Toro (1974) provides the most comprehensive account of this species. Zubietta (1977) describes nesting, coloration and habits in Tabasco. Dugès (1889) describes throat glands of a juvenile from Veracruz. Cabellero y C. (1947) describes a strigeid trematode from the intestines. Hunt (1973, 1975) describes parental care, juvenile vocalization, nesting, egg and clutch size of captives, and (1977) adult aggression towards juveniles in captivity. Greer (1975) gives hatchling length and mean clutch size. Shreve (1957) comments on feeding. Ruthven (1912) describes juvenile behavior in Veracruz. Schmidt (1924) comments on juvenile morphology and feeding habits. Neill (1971) comments on early confusion between *C. moreletii* and *Crocodylus rhombifer* Cuvier. Morelet (1871) describes the capture and killing of the holotype. Abercrombie et al. (1980) and Groombridge (1982) discuss current status of the species. Pérez-Higareda (1979) comments on distribution and status of the species in Veracruz. *Crocodylus moreletii* is an endangered species (Code of Fed. Reg., 1977).

● **NOMENCLATURAL HISTORY.** Most workers have attributed authorship of this species to Duméril and Duméril, having overlooked the designation of Duméril and Bibron as authors in Duméril and Duméril, 1851. Smith and Smith (1977) while attempting to clarify authorship of the name, follow Stuart (1963) and attribute the description to Duméril and Bocourt. Which Duméril is referred to can not be ascertained.

Crocodylus moreletii was confused with *C. rhombifer* by Barbour and Ramsden (1919), who presumed that the holotype was collected in Cuba en route to Central America by Morelet. Schmidt (1924) rediscovered the species when he described specimens from Belize. The account of the capture and death of the holotype by Morelet (1871) was overlooked.

Duméril (1852) and Bocourt (1873) indicate Morelet collected two "premiers exemplaires" at Laguna de Petén, one of which is

still in the Musée de Dijon (S. Tillier, pers. comm.). Duméril and Bibron (1851), Duméril (1852) and Morelet (1871) describe only the holotype. Smith and Smith (1977) follow Duméril (1852) and Bocourt (1873) in recognizing syntypes, and designate MNHN 7520, the holotype, as lectotype for the taxon.

Alligator lacordairei Preudhomme de Borre, 1869, was considered synonymous with *C. moreletii* until recently (Bocourt, 1869; Boulenger, 1889; Smith and Taylor, 1950a), when Ross and Ross (1974) reexamined typical material and synonymized it with *Crocodylus acutus* Cuvier. The specific allocation of *Crocodylus mexicanus* Bocourt was confused (Boulenger, 1889; Werner, 1933b; Smith and Smith, 1976; Wermuth and Mertens, 1961 and 1977) until recently when Ross and Ross (in press) showed it to be synonymous with *C. moreletii*.

● **ETYMOLOGY.** The specific name *moreletii* honors Pierre Marie Arthur Morelet, collector of the holotype.

COMMENT

The distribution of *C. moreletii* in México and Central America is imperfectly known because the variation of supposed diagnostic characters has caused confusion between this species and *C. acutus* until recently (Ross and Ross, 1974). Whether *C. moreletii* and *C. acutus* are sympatric in northeastern México is uncertain (Campbell, 1972; King et al., 1982) and no specimens of *C. acutus* are known from north of Tabasco. The range of the species in northern Yucatán is uncertain. The southern limit of the species range in Belize is uncertain but there are no verifiable records south of the Mayan Mountain range. The occurrence of natural hybridization between *C. moreletii* and *C. acutus* in Belize and Mexico has been postulated (Ross and Mayer, 1983). Pliocene material from Baja California described by Miller (1980) may only be identifiable to genus and needs re-examination.

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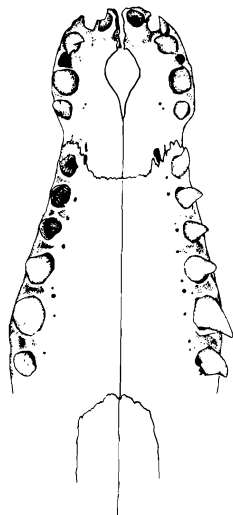


FIG. 2. Anterior ventral view of *Crocodylus moreletii* skull (USNM 52335) from Catamaco, Veracruz, México, showing transverse premaxillary-maxillary suture. Drawing by D. Horner.

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